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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,241	09/08/2000	Donald L. Hohnstein	1822/USW0601PUS	3022

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QWEST COMMUNICATIONS INTERNATIONAL INC
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EXAMINER

TRINH, TAN H

ART UNIT PAPER NUMBER

2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/658,241

Applicant(s)

HOHNSTEIN ET AL.

Examiner

TAN TRINH

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19, 22-29 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19, 22-29 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6-19, 22-28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cunningham (U.S. Patent No. 4144496) in view of Carey (U.S. Pub. No. 20020068612).

Regarding to claims 1, 11 and 31, Cunningham teaches a wireless communication system (see figs. 1 and 2) comprising: a plurality of access points (see fig. 2, base stations), each access point having at least one omnidirectional antenna forming a substantially uniform coverage area around the access point (see fig. 1 and 4, base station 24, omnidirectional antenna 30, with services area 38, col. 4, lines 35-40); and a plurality of subscriber units (see fig. 2, col. 4, lines 55-col. 5, lines 7), The directional coverage area selectable from a plurality of directional coverage areas provided by the subscriber unit; wherein each subscriber unit communicates with a particular access point through transmissions between the subscriber unit directional antenna and the omni-directional antenna for the particular access point (see figs. 1-2 and 4, col. col. 5, lines 27-68, and col. 6, lines 49-64). But Cunningham does not mention each subscriber unit having at least one directional antenna forming a directional coverage area.

However, Carey teaches each subscriber unit having at least one directional antenna forming a directional coverage area (see figs. 3-4, subscriber unit station 20, with directional antenna 60, directional coverage area 52, and page 6, sections [0066-0068]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Cunningham with Carey on the directional antenna, in order to provide user transmits and receives data encoded on or more data carries to and from the base station over the two-way broadband wireless communication link (see Carey page 6, section [0068]).

Regarding to claim 2, Cunningham teaches a routing network interconnecting the plurality of access points (see Figs.8A-B, routing network interconnecting base stations 24A-G, col. 18lines 36-66).

Regarding to claim 3, Cunningham teaches wherein the routing network comprises a distributed network of distribution points (see figs. 8A-B, central control, and col. 17, lines 42-61).

Regarding to claim 4, Carey teaches wherein at the distribution point is in the same location as one access point (see fig. 4, distribution point 48 and access point 24).

Regarding to claim 6, Carey teaches wherein transmissions between the subscriber unit and the access point comprise packet information (see fig. 1C, data network, page 6, section [0062]).

Regarding to claim 7, Carey teaches wherein the subscriber unit is a terminal and network controller comprising at least one interface, each interface providing access to the

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wireless communication system (see fig. 1C, Link interface 45, and also the interface first port and second port 32, page 4, sections [0043] and page 6, section [0060]).

Regarding to claim 8, Carey teaches the terminal network controller further comprises a routing switch routing information packets to and from the at least one interface (see fig. 1C, Link interface 45 and switching equipment 46, interface with data network 48 on communication link 42, page 6, section [0060 and 0062]).

Regarding to claims 9, Carey teaches the directional antenna comprises a plurality of antenna patches, the subscriber unit selecting at least one antenna patch as the directional antenna (see fig. 3-4, page 6, section [0067]).

Regarding to claim 10, Carey teaches wherein the directional antenna is operative to be positioned to optimize transmissions between the subscriber unit and the particular access point (see page 2 section [0015] and page 5, section 0057)).

Regarding to claim 12, Cunningham teaches wherein at least one access point has both at least one omnidirectional antenna and at least one directional antenna (see figs. Fig. 1, omnidirectional antenna 30, and directional antenna 32).

Regarding to claim 13, Cunningham teaches wherein access points transmit from omnidirectional antennas at a first frequency and from directional antennas at a second frequency different than the first frequency (see figs. 1 and 6-7, col. 16, lines 5-53).

Regarding to claim 14, Cunningham teaches a method of wireless communication (see fig. 1-2): the transmitting downlink information in a substantially uniform coverage area around each of a plurality of access points (see col. 4, lines 26-54), receiving the downlink information at a subscriber unit (see col. 4, lines 66-col. 5, lines 7); transmitting uplink information in a focused coverage area from the subscriber unit; and receiving the uplink information at one of the access points (see figs. 1-2 and col. 7, lines 43-53), routing information between the plurality of the access points and sending the information to an access point in communication with the distribution point (see 8A-B, central control); if the information is destined for a subscriber unit in communication with the access point (see 8A-B, central control, col. 17, lines 42-61 and routing network interconnecting base stations 24A-G, col. 18 lines 36-66), otherwise forwarding the subscriber to another distribution point in communication with the distribution point (see fig. 6, wire-line telephone system 22 and central control). But Cunningham does not mention the routing information receiving in the information distribution point.

However, Carey teaches the routing information receiving in the information distribution point (see fig. 4, distribution point 48 and access point 24, and fig. 1C, page 4, sections [0047-0048]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaches of Cunningham with Carey in order to provide user with data from external data network (see Carey page 4, section [0047]).

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Regarding to claim 15, Cunningham teaches wherein the transmitting in the substantially uniform coverage area around each of the access points comprises transmitting from an omnidirectional antenna and receiving the uplink information comprises receiving at the omnidirectional antenna (see figs. 1 and 6, omnidirectional antenna 30 and 36, col. 16, lines 5-40).

Regarding to claim 16, Carey teaches wherein the transmitting in a focused coverage area comprises transmitting from a directional antenna and receiving the downlink information comprises receiving at the directional antenna (see figs. 3 and 4, transmitting/receiving from the directional antenna 60, page 7, section [0073-0074]).

Regarding to claim 17, Carey teaches the selecting one of a plurality of antenna patches to form the directional antenna (see fig. 3-4, page 6, section [0067]).

Regarding to claim 18, a method of wireless communication as in claim 16 further comprising aiming the directional antenna to improve receiving the downlink information. (This is a well known, since the antenna has to point and aim on the direction of the antenna pointing the cover area to improve the receiving downlink information).

Regarding to claim 19, Carey teaches wherein the downlink information and uplink information comprise packet information (see fig. 1C, data network, page 6, section [0062]).

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Regarding to claim 22, Cunningham teaches wherein routing information comprises transmitting the information between each access point and one of a plurality of distribution points (see Figs.8A-B, routing network interconnecting base stations 24A-G, col. 18lines 36-66).

Regarding to claim 23, Carey teaches wherein the transmitting the information comprises wireless transmission (see figs 1 and 3-4, page 1, section [0009]).

Regarding to claim 24, Carey teaches wherein at least one access point is in the same location as at least one distribution point (see fig. 4, distribution point 48 and access point 24).

Regarding to claim 25, Carey teaches the routing the downlink information to one of a plurality of interfaces at the subscriber unit (see fig. 7, the interfaces is antenna 60 and subscriber transceiver 64, page 12, section [0109-0110]).

Regarding to claim 26, Carey teaches the transmitting downlink information in a focused coverage area around each of a plurality of access points receiving the downlink information at a subscriber unit; transmitting uplink information from a substantially uniform coverage area around the subscriber unit; and receiving the uplink information at one of the access points (see figs. 1C and 3-4, page 6, sections [0065-0068]).

Regarding to claim 27, Cunningham teaches at least one access point, both transmits downlink information in a focused coverage area and transmits downlink information in a

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substantially uniform coverage area (figs. 1 and 6, both antenna transmits downlink information in a focused coverage area 38, col. 5, lines 27-68).

Regarding to claim 28, Cunningham teaches wherein downlink information transmitted in the substantially uniform coverage area is transmitted at a first frequency and downlink information transmitted in the focused coverage area is transmitted at a second frequency different than the first frequency (see figs. 1 and 6-7, col. 16, lines 5-53).

3. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carey (U.S. Pub. No. 20020068612).

Regarding to claim 29, Carey teaches a plurality of access points (see fig. 1 and 4), each access point transmitting and receiving information packets (see fig. 1C, page 4, section [0047]), each information packet transmitted over a substantially uniform coverage area around the access point (see fig. 1C, page 4, section [0047]); a network of distribution points in communication with the access points (see fig. 1C, network of distribution 48 and access point 22), the distribution points routing information packets between the access points (see fig. 1C, the distribution points 48, routing information packets between the access points on link 42, page 6, sections [0061-0062]); and a plurality of subscriber units (see fig. 4, subscriber units in area 50 or 52), each subscriber unit transmitting and receiving information packets (see fig. 3, transmitting and receiving link 26, page 6, section [0066]), each subscriber unit transmitting information packets over a focused directional coverage area (see fig. 4 each subscriber unit transmitting focused on directional area 152, 252, and 352, page 8, section [0080-0081]); Carey teaches

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a set of packets with similar or identical characteristics which may be forwarded the same way to all the subscriber; the wireless communication system of FIG. 1C couples one or more fixed subscriber stations 20 to the data network 48 to provide a variety of communication services to the fixed subscriber stations, such as, but not limited to, video conferencing, telephony, high-speed Internet access, and two-way high-speed voice and data transfer, That is obvious the distribution points routing information packets between the access points based upon a forwarding equivalency class (FEC) for each access point.

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Carey, in order to provide user a higher-layer packet depend on the configuration of the router or distribution points, and destination IP address with the Quality of service class is often used.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cunningham (U.S. Patent No. 4144496) in view of Carey (U.S. Pub. No. 20020068612) further in view of Komara (U.S. Patent No. 6690662).

Regarding to claim 5. Carey teaches wherein at least one access point is in wireless communication with the routing network through wireless network backbone (see page 3, section [0039]). But Cunningham and Carey fail to teach backhaul antenna.

However, Kimara teaches wireless communication with the routing network through backhaul antenna (see figs. 3 and 4, backhaul antenna 330 or 330-N-12, col. 6, lines 36-57).

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Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching Cunningham and Carey, with Kimara in order to provide user to routing data through wireless network backbone with backhaul antenna.

Response to Arguments

5. Applicant's arguments filed on 01-09-2007 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, regarding claims 1 and 14 and 31, Applicant argues that the combination of reference of Cunningham and Carey has no motivation to combine, because of the Cunningham teaches the mobile units subscriber is using the omni-directional antenna and does not teaches the mobile units using the directional antennas, and the reference of Carey does not teaches the directional antenna using in mobile station, just only teaches the directional antenna using in the fixed subscriber station. However, the examiner is agreed of that teaching of Cunningham and Carey references. But the examiner does not agree the combination of reference of Cunningham and Carey has no motivation to combined. Since the reference of Cunningham teaches the mobile subscriber unit using the omni-directional antenna, and Carey teaches the fixed

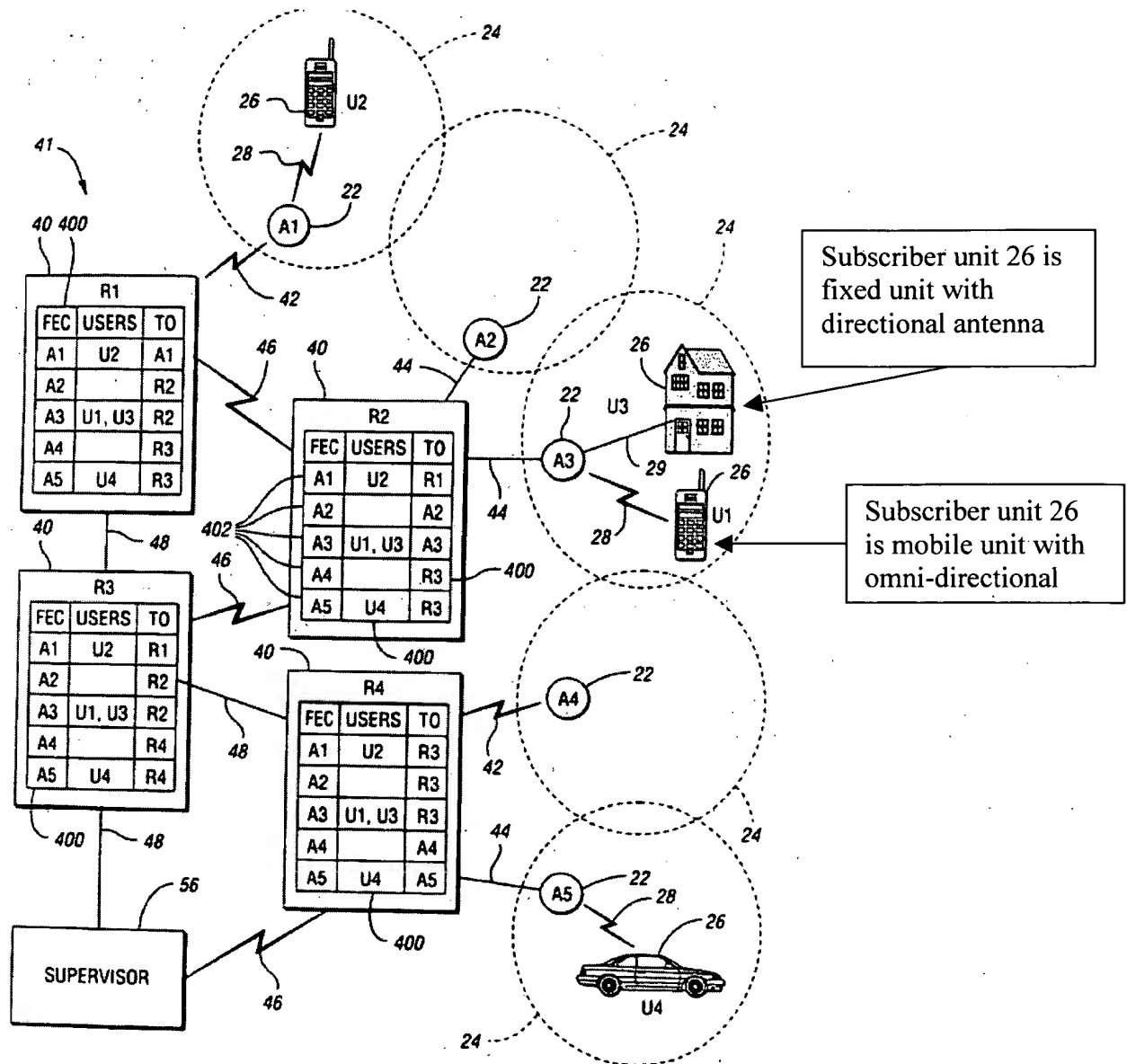
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subscriber station using the directional antenna. Therefore, the combination of the two references will teaches the subscriber directional antenna and the omni-directional antenna for the particular access point as limitation of the invention (see Cunningham fig. 1-2 and col. 2, lines 41-59, col. 5, lines 29-42, and see Carey figs. 3-4, page 6, sections [0066-0068]).

Moreover, claims does not recite that “*subscriber unit*” is a the mobile unit (station). Applicant only claims *the subscriber unit*, and the subscriber unit can be mobile unit or fixed unit.

In addition to that, according to the specification of the present application. The Subscriber unit 26 may also establish wireline link 29 with access point 22. Links 28, 29 may be symmetrical or asymmetrical. *Subscriber unit 26 may be fixed or non-fixed* and, if non-fixed, may posses varying degrees of portability and mobility. Subscriber unit 26 may be a mobile telephone, a computer, a video receiver, an audio receiver, a two-way video conferencing station, a video game, an information kiosk, a remote sensor, a remote actuator, or any other suitable communication device. (See **specification on pages 6-7**, and also see the application **fig. 7** below).

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Therefore, the specification on pages 6-7 and fig. 7 of the present application discloses that Subscriber unit 26 may be fixed or non-fixed.

For the reasons as set forth above, the examiner contends that the combination of the reference of Cunningham and Carey is proper.

Regarding claim 14, Applicant argues that the reference of Cunningham and Carey does not teach or suggest the routing action between the access points and distribution points.

However the examiner does not agree. Since the reference Cunningham teaches of the routing action between the access points and distribution point (see figs. 8A and 8B, access points 24s routing action the other access points 24s and distribution point (central control unit) and interconnecting base stations 24A-G, col. 17, lines 42-61 and col. 18, lines 36-66). Therefore, the reference of Cunningham reads on the limitation of claim.

Regarding claim 29, Applicant argues that the combination of reference of Cunningham and Carey fails to suggest the feature of the claim. However, the examiner does not agree, since the examiner does not combine the references of Cunningham and Carey (see rejection claim 29).

In addition the reference of Carey teaches the subscriber transmitting the information packets over a focused directional coverage area, and distribution point and routing information packets between the access points. (see fig. 1C, page 4, section [0047], and network of distribution 48 and access point 22, the distribution points routing information packets between the access points (see fig. 1C, the distribution points 48, routing information packets between the access points on link 42, page 6, sections [0061-0062]). Therefore the Carey is still teaching the limitation of the claim.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300, (for Technology Center 2600 only)

Hand-delivered responses should be brought to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (571) 272-7888. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.


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If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Anderson, Matthew D., can be reached at (571) 272-4177.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is (703) 306-0377.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan H. Trinh 
Division 2618
March 27, 2007

Anderson, Matthew D. (SPE 2618)

